

AMENDMENTS TO THE SPECIFICATION:

Kindly replace paragraph [0029] with the following amended paragraph:

As shown in Fig. 1, the piston P of the piston pump can be a stepped piston having a smaller diameter portion 40 and a larger diameter portion 50. The smaller and larger diameter portions of the piston can be integral, or in an alternative embodiment, such as illustrated in Fig. 9, the larger diameter portion of the piston P₁ can be formed as a separate sleeve 252 that slides over the outer diameter of the smaller diameter piston 240. The piston P, shown in Figs. 1-6, or piston P₁, shown in Fig. 9, are mounted rotatably and reciprocally in a cylinder housing 30 having a smaller diameter cylinder (i.e., a cylindrical recess) 38 and a larger diameter cylinder (i.e., a cylindrical recess) 39. According to a preferred embodiment, the smaller diameter portion of the piston 40 fits with an interference fit within the smaller diameter cylinder 38, while the larger diameter portion 50 of the piston P fits within the larger diameter cylinder 39 with or without an interference fit.

Kindly replace paragraph 0039 with the following amended paragraph:

The stroke of the piston P in the embodiment of Fig. 1 is determined by the amount of eccentricity E (shown in Fig. 2A) on the barrel cam 60 as it is rotated about its central axis A. As the barrel cam 60 is rotated about its central axis A, the lugs 55a, 55b of the piston extension flange 54 travel within the cam grooves 65a, 65b around the outer periphery of the barrel cam 60. Rotation of the barrel cam 60 about its central axis A therefore causes rotation of the piston P within the cylinder 30 until the lugs 55a, 55b of the piston reach a dwell portion 65a', 65b' of the cam grooves defined around the outer periphery of the barrel cam 60. These dwell

portions 65a', 65b' of the cam grooves extend around the eccentric portion of the barrel cam 60 at a constant axial position relative to the central axis A of the barrel cam 60. Accordingly, when the lugs 55a, 55b of the piston extension 54 reach the dwell portions 65a', 65b', the barrel cam 60 can continue to rotate without causing a rotation of the piston. Thus, the piston can then translate without rotation. The amount of eccentricity E of the barrel cam 60 in this region of the outer periphery of the barrel cam 60, or change in radial distance from the central axis A to the outer periphery of the barrel cam, determines the stroke of the piston as the barrel cam continues to rotate about axis A.

Kindly replace paragraph 0044 with the following amended paragraph:

Referring to Fig. 4, after the piston 40 has been moved all the way back from end wall 37, and the cylinder 38 and fluid groove 42 are filled with fluid from the reservoir 25, the piston 40 is rotated to a position where the fluid groove 42 is aligned with the exit port 34, i.e., the piston rotates without translation.